CHEMISTRY
Progression of Knowledge, Skills and Vocabulary

EYFS	KS1	LKS2		UKS2	
	Year 1/2	Year 3	Year 4	Year 5	Year 6
Early adopter ELG's listed in Biology document Key chemistry skill: I can understand some important processes and changes in the natural world around me, including the seasons and changing states of matter.	**Cycle A and B** **Everyday materials** **NC** *Pupils should be taught to:* *♣ distinguish between an object and the material from which it is made* *♣ identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock* *♣ describe the simple physical properties of a variety of everyday materials* *♣ compare and group together a variety of everyday materials on the basis of their simple physical properties.* • I can describe an object including the material it is made from • I can identify and name a variety of common materials inc. wood, plastic, glass, metal, water and rock • I can talk about and describe the properties of different materials • I can compare materials and sort them into groups, explaining my reasons. **Vocabulary** **Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, waterproof, absorbent, tear, rough, smooth, shiny, dull, see through, not see through** **Everyday materials** **NC** *Pupils should be taught to:* *♣ identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses* *♣ find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.*			**Properties and changes of materials** **NC** *Pupils should be taught to:* *♣ compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets* *♣ know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution* *♣ use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating* *♣ give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic* *♣ demonstrate that dissolving, mixing and changes of state are reversible changes* *♣ explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.* • I can compare and group materials according to their properties inc. hardness,	

(Aut/Spr/Sum)

	• I identify and compare the suitability of materials for particular uses inc. wood, metal, plastic, glass, brick, rock, paper and cardboard • I can describe the changes to some materials by squashing, bending, twisting and stretching. • I can begin to describe ways to sort materials *e.g. gas/liquid/solid.* • I can begin to recognise that some changes can be reversed (reversible) and others cannot (non-reversible) **Vocabulary** **Suitable/unsuitable, use, object, material, property, wood, plastic, glass, metal water, rock, fabrics, hard, soft, stretchy, flexible, waterproof, absorbent, transparent, translucent, opaque, shape, change, twist, squash, bend, stretch, roll, squeeze**			solubility, transparency, conductivity (electrical and thermal) and response to magnets • I can describe the properties of a range of solids including metal • I can explain the relationship between liquids, solids and gases. • I can identify a range of contexts in which condensation and evaporation take place. • I can name some materials that will dissolve in liquid to form a solution • I can describe how to recover a substance from a solution • I can use scientific knowledge of solids, liquids and gasses to decide how mixtures could be separated, including through filtering, sieving and evaporating • I can give scientific reasons based on comparative and fair tests for the uses of everyday materials • I can demonstrate some changes such as dissolving, mixing or changes in state are reversible • I can discuss some irreversible changes and explain that some changes result in the formation of new materials **Vocabulary** **Y4 plus rigid, hard, soft, stretchy, flexible, waterproof, absorbent, electrical/thermal conductivity, melting, dissolve, solution, insoluble, solute, solvent, particle, mixture, filtering, sieving, residue, reversible/non-reversible**	

(Aut/Spr/Sum)

					changes, new material, burning, rusting,	
			Rocks **NC** *Pupils should be taught to:* *♣ compare and group together different kinds of rocks on the basis of their appearance and simple physical properties* *♣ describe in simple terms how fossils are formed when things that have lived are trapped within rock* *♣ recognise that soils are made from rocks and organic matter.* • I can compare and group rocks according to their appearance and simple physical properties • I can describe in simple terms how fossils are formed (living things trapped between rocks) • I can explain that soils are made from rocks and organic matter **Vocabulary** **Rock, stone, pebble, boulder, soil, fossils, grains, crystals, texture, absorb water, let water through, marble, chalk, granite, sandstone, slate,**			

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			sandy soil, clay soil, chalky soil, peat,			
				States of matter **NC** *Pupils should be taught to:* ♣ *compare and group materials together, according to whether they are solids, liquids or gases* ♣ *observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)* ♣ *identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.* • I can classify and describe materials according to whether they are solids, liquids or gases • I can describe the differences between the properties of different materials. • I can say how some materials change state when they are heated or cooled • I know that different substances melt at different temperatures		

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				• I can measure or research the temperature at which a specific material changes state in degrees Centigrade • I know how evaporation and condensation play a part in the water cycle • I know how the rate of evaporation in the water cycle is linked to temperature • I can make predictions about whether changes are reversible or not. • I know how to separate some simple mixtures e.g. filtering, sieving, evaporation **Vocabulary** **States of matter, solid, liquid, gas, air, oxygen, powder, granular/grain, crystals, change state, ice/water/steam, water vapour, heating, cooling, temperature, degrees Celsius, melt, freeze, solidify, melting point, boil, boiling point, evaporation, condensation, water cycle, precipitation, transpiration**		

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